

Title: *The Challand Horticulture Program Grows Student Minds and Expands Interests*

Introduction: The Challand Horticulture Program was established to fit the needs of one of our local school districts. Mrs. Julie LeFevre, Agriculture Teacher at Challand Middle School, needed assistance with teaching horticulture in her class. During the first-year planning in 2017, Black and LeFevre used the State Standards for what horticulture topics needed to be addressed including horticulture and the horticulture industry, careers, the different sciences within horticulture, etc., leading to an eight monthly visits focused on a topic. Additionally, during the first year, Black used the standard Extension survey available and informal check-ins with the students to measure how the program was being received and how it could be improved. The beginning goal for the first year was to build a partnership with Challand Middle School, develop a curriculum based on the topics, and engage the students in this pilot program. At the end of the first year, Black received some good feedback, to bring more hands-on labs to increase participation and learning.

From the second year to now, Black has been using a specifically designed, 18-question pre/post survey given to the students to measure their horticulture knowledge change during the school year. In the second year, Black refocused the learning objectives to:

- Students will develop an understanding how horticulture fits into agriculture and biology.
- Students will use hands-on or learning labs to enhance their understanding.
- Horticulture careers will be included in every lesson to expand students' exposure to potential jobs.

Black uses check-ins with students during lessons and the review to check for understanding and additional topics to engage students. Black has used this practice to evolve the program and add additional classes and labs such as climate change and decoding Valentines' bouquets. Black and Mrs. LeFevre are continuing their partnership this fall offering the Challand Horticulture Program again.

Description: The Challand Horticulture Program is a monthly program that occurs every school year at Challand Middle School in Sterling, Illinois. Developed by Bruce Black and implemented with Agriculture Teacher Julie LeFevre, the students experience a wide variety of horticultural topics to expand their knowledge, skills, and explore career opportunities in a topic that is unknown to most students. The program takes a ground up approach to learning about Extension and horticulture. During the first session every September, students learn about what Extension is and about the "umbrella science," horticulture. Relating horticulture to how it fits in with botany, agriculture, and other natural resources sciences while relating it to what they already know or products they use in their daily lives.

Over the course of the time together, Black leads discussion-based programs on pomology, olericulture, greenhouse production, plant propagation (pollination & vegetative), and floriculture. As topics and interests have been expressed by students, Black has incorporated climate change, therapeutic horticulture, and others. Each of Black's lessons build upon the seasonality of horticultural crops (pumpkins for fall or cranberries for Thanksgiving) or relating to a holiday

(poinsettias for the winter holidays or floral language for Valentine's Day) to bring more connection to the students. This connection and building upon the knowledge of everyday products has aided in retention in the information learned. Students consistently recall products or events we connected the information to before the horticultural name. The incorporation of food labs connecting to the subject has also aided in the increased attention span of the middle school students. Over the course of the eight-year period, 1192 agriculture students have gone through the Challand Horticultural program since its inception, expanding the horticultural knowledge of future consumers and the reach of Extension, helping to inform the community of all the services we provide to the community for them to utilize. This has been enhanced by the CMS Ag Instagram page where Mrs. LeFevre posts photos, videos, and synopsis of our lessons during the program. Anyone who follows this social media page is able to see the activity or lab we have done and how Extension has played a role.

Evaluation: The pre- and post-survey have been the main form of evaluation used for the Challand Horticulture Program. Black also uses check-ins with the students during the lessons and during the review session at the end of the year to check for understanding and gather additional topics to enhance the program.

The pre-/post-survey was developed during the second year of the program when the standard Extension survey did not measure the specific knowledge changes about the program. The pre-survey is given prior to the first session of the series. Black receives only raw data from the pre- & post-surveys to conduct a blind evaluation without student identifiers. The survey focuses on the topics Black covers and is broken down into two sections, a definitions section and the multiple choice, key points section. Based on pre-survey scores, Black knows which topics the students have the least knowledge in and can bring in real-life connections for the students. During the last seven years, **90% (1073 out of 1192)** of agriculture students have **gained a 10-point or more knowledge increase** from pre- to post-, 18-question survey.

Black's informal check-ins have proved to be an invaluable source for adapting the program. Students have shared their opinions for a better experience. Middle School students have an affinity towards foods which was reinforced the first year while using pumpkin pie in a bag when discussing Olericulture and Illinois pumpkins, which was noticed by Challand Administration who purchased classroom equipment, like an air fryer for the use of student-grown Challand Garden produce. Students are encouraged to raise questions even if not directly related to the topic. One student asked about climate change during the greenhouse lesson, sparking student conversation. Black developed the next session on climate change, which is now part of the yearly program.

Impact: The Challand-specific pre-/post-survey has become the cornerstone to the horticulture series for Challand. Using the science standards to help develop this series makes sure that it aligns with the ag class curriculum. The pre-survey is given to the students by Mrs. LeFevre prior to the first session of the series. Black receives only raw data from the pre- & post-surveys to conduct a blind evaluation without student identifiers. The survey has been implemented as one of the class assessments for the Challand Agriculture class. During the first year, the general Extension evaluation was given but not taken seriously by the students. Having the Challand-specific assessment following the science standards has allowed Mrs. LeFevre to use it as a unit test. All

students take the survey giving **100% participation in the evaluation** unless a student switches out of class between semesters.

In 2023, students began a *Horticulture Notebook* designed for them to take notes during Extension lessons. This encourages students to have a one-stop repository for their notes, lab notes, and definitions. The addition of the *Horticulture Notebook* was noted during our last check-in to ease test anxiety by several students and increase participation in the review *Jeopardy* class. (198 words)

Future: This program will continue and continue to be evaluated. Each year new seventh graders at Challand get to experience hands-on horticulture through Black's sessions, and often realize while not knowing the word horticulture, they have had experience in horticulture before through gardening, food, or previous ag exposure. The 2024-25 school year has been planned and begins in September.

With the annual additions to the class, the evaluation is due for a revision to include topics like climate change which were recently added. This revision is planned for this year with implementation in the 2025-26 school year. One plan for the revision may just include addition of questions to keep the data comparable to the previous years. The other plan would be to redesign the survey. With the increase in iPads for schoolwork, the survey is also likely to become digital. The Challand Horticulture Program is also due for a rebranding to be able to expand the program into other schools and counties. This has been attempted with St. Andrews School but did not continue past it's second year due to a staffing change.